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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/782,835	02/14/2001	Dirk Quintens	27500/016	1614

7590 06/15/2006

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EXAMINER

DICUS, TAMRA

ART UNIT PAPER NUMBER

1774

DATE MAILED: 06/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/782,835	Applicant(s) QUINTENS ET AL.	
	Examiner Tamra L. Dicus	Art Unit 1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The prior rejections are withdrawn due to Applicant's arguments.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Examiner believes that independent claims 1, 18, and 19 do not have the proper support in the original specification as filed because the specification does not provide any teaching or discussion on hydrolyzed copolymer vinyl-acetate, hydrolyzed silane, or polyvinylacetate modified by reaction with one of the silanes of instant claim 18 or its usage with Applicant's claimed ink jet recording. Applicant appears to not claim the final end product and the original specification does not support for hydrolyzed copolymer vinyl acetate and/or silane or the reaction. See Applicant's specification on page 7, lines 9-15 specifically reciting a silanol modified polyvinyl alcohol as the end product and calling the silanes and vinyl acetate copolymerization as a precursor. Because the vinyl acetate and silanes are useful precursors, they are not the final product. See also page 7, lines 4-6 stating "it is essential to the present invention that this binder is silanol modified polyvinyl alcohol" and that this composition is

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commercially available. Furthermore, the only place where hydrolysis is mentioned is in Applicant's Table 1 referring to the hydrolysis of "PVA". There isn't enough description to enable the invention to the polymer and hydrolysis as there is no explanation or experimentation as to what is hydrolyzed nor at what stage in the process of making the polymer does the hydrolysis take place. Merely mentioning the PVA and inserting a column that contains a hydrolysis range is not enough detail to make or use the invention. In light of the specification, in the broadest sense, Applicant has support only for a silanol modified polyvinyl alcohol.

3. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. See Applicant's specification on page 7, lines 9-15 to mentioning silanol modified polyvinyl alcohol and how it may be obtained with the aforementioned precursors, but no mention of the steps involved to actually make it. There is not enough description to enable the invention to the making of the polymerization of PVA or the reaction of VAc with silane using hydrolysis as there is no explanation or experimentation as to what is hydrolyzed nor at what stage in the process of making the polymer does the hydrolysis take place. Merely mentioning the PVA and inserting a column in Table 1 that contains a hydrolysis range is not enough detail to explain how to make or use the invention.

4. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Silanol modified polyvinyl alcohol is critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re*

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Mayhew, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). See page 7, lines 4-6 stating “it is essential to the present invention that this binder is silanol modified polyvinyl alcohol”.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

7. As presently written, claims 1 and 19 are not clear to part (b) “a hydrolyzed copolymer of vinylacetate and silane monomer”. This part is confusing as it does not clearly claim what polymer is the hydrolyzed one, e.g. is only the vinyl acetate hydrolyzed, or only the silane, or is it the polymerization of the reaction of vinyl acetate and silane that is hydrolyzed? Using the word “and” instead of “reaction with” or “with” is misleading, as “and” means incorporation, compared to “with” or “reaction with”, which is suggested language (like instant claim 18 and the language consistent with the originally filed specification e.g. “copolymerization of vinyl acetate with monomers like vinyltrimethoxysilane....”).

8. Further, if one is referring to the use of three monomer units, the accepted terminology is a terpolymer, not copolymer. Also because “copolymer” is before “vinylacetate”, one infers that this is the copolymer of reference, especially since the word “monomer” is after “silane” and thus would reference the silane is a separate monomer and not a part of the vinylacetate chain. Thus, because the claims do not contain full, clear, concise, and exact terms, the overall invention is unascertainable and indefinite.

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9. Claims 1 and 19 recite “a subbed polymeric type support”. This language is not a well known term in the art and using “type” is indefinite, thereby rendering the scope of the claims unascertainable. See *Ex parte Copenhaver*, 109 USPQ 118 (Bd. App. 1955).

Response to Arguments

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

11. Over the course of prosecution, the Examiner has applied ink jets that contain silanol modified polyvinyl alcohol and hydrolyzed vinylacetate in an attempt to meet the amended claims. However, upon recent review, the Examiner found that inserting the new claim 18 and the word “hydrolyzed” before “vinylacetate and silane monomer” in the 09/02/04 amendment is not only ambiguous, but is also new matter, and an attempt to remove essential elements from the claim, in addition to lack of enablement to the reaction of the product (claim 18) in the 10/29/03 amendment. It appears there are several ways of making silanol modified polyvinyl alcohol, as the Examiner has shown (and included new references below), but Applicant has not set forth clearly how to make the instant invention. While Applicant has recently argued that the product is “vinylacetate-silane”, the claims (1 and 19) are broadly written and claim 18 is not enabled, and further they do not narrow the end product to what is argued as there are several possible units mentioned vinyl, acetate, and silane (see “Polymer Chemistry, The Basic Concepts”) and the way it is written is unclear. Nevertheless, it appears from the summary of the invention that only silanol modified polyvinyl alcohol is used, not the making or reaction of the

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actual polymer/copolymer/terpolymer. Thus, an art rejection has not been applied and the status will remain as such until Applicant can clarify what is intended.

REFERENCES OF INTEREST

- USPN 4,617,239 to Maruyama teaches a variety of silicon-containing monomers in Table 7 such as vinyl trimethoxy silane, vinyltriacetoxysilane and the reacted PVA using vinyl acetate with vinylmethoxydioctyloxysilane in Example 24.
- USPN 6,346,570 to Kazuyuki (foreign priority document in process of translation)

teaches silanol modified PVA is obtained by various methods including hydrolysis of the vinyl acetate and reacting a silyl group with trimethoxysilylmethylmercaptan or the like and hydrolyzing the product thereafter.

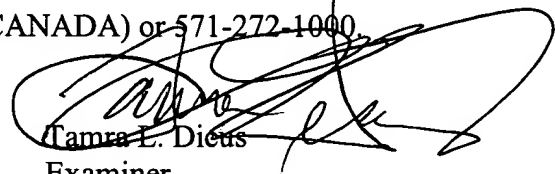
- USPN 6,432,519 to Kazama (foreign priority document in process of translation) teaches polyvinyl alcohols types are obtained by hydrolyzing polyvinyl acetate, or silanol modified polyvinyl alcohols are preferred.
- USPN 6,383,137 to Liu teaches using vinyl trimethoxy silane in Example IV-3 in a silicon-containing modified PVA containing silyl group having a reactive substituent such as silanol group as hydrolyzate thereof, made by allowing a silicon-containing polymerizable monomer and a vinyl acetate to undergo copolymerization and styrene-butadiene latexes.
- USPN 5,989,378 to Liu teaches a silicon-containing modified PVA containing silyl group having a reactive substituent such as silanol group as hydrolyzate thereof, made by allowing a silicon-containing polymerizable monomer and a vinyl acetate to undergo copolymerization.
- USPN 5,496,634 to Ogawa teaches silyl-modified polyvinyl alcohol and pigments used in combination of two or more with polymer latexes like styrene-butadiene copolymer.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tamra L. Dicus whose telephone number is 571-272-1519. The examiner can normally be reached on Monday-Friday, 7:00-4:30 p.m., alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Tamra L. Dicus
Examiner
Art Unit 1774

June 10, 2006


RENA DYE
SUPERVISORY PATENT EXAMINER
A.U. 1774 6/12/06